

PHYCOLOGICAL NOTES: GREEN ALGAE OF A RAINWATER POOL FROM TARRAGONA  
(NE OF SPAIN)

Jaume Cambra  
Dept. Botànica, Fac. Biologia, Univ. Barcelona  
Avgda. Diagonal, 645  
08028 BARCELONA (SPAIN)

Abstract

*Chlamydomonas carpatica*, *Chlorolobion braunii* and *Chlorolobion lunulatum* have been recorded for the first time in Spain. Data concerning morphological features, habitat and distribution of species are given.

Introduction

The small blooms of green algae are very usual in temporal aquatic systems. Little seems to be known about phytogeography and ecology of these species. Most of them appears in ephemeral bodies of water and it is difficult to determine their exact distribution.

During a phycological survey carried in Tarragona (Fig. 1), we have recorded three new species for the Spanish flora (MARGALEF 1949, 1950; CAMBRA 1985; ALVAREZ COBELAS 1986): *Chlamydomonas carpatica* Ettl (*Volvocales*, *Chlorophyta*), *Chlorolobion braunii* (Näg.) Kom. and *C. lunulatum* Hind. (*Chlorococcales*, *Chlorophyta*). This species has been collected in November (1986), growing in a rain-water pool of Masarboñès (311CF693691), in Tarragona province (NE of Spain).

Description of species

*Chlamydomonas carpatica* Ettl (Fig. 2,3)

The cells (15-18  $\mu\text{m}$  long; 10-12  $\mu\text{m}$  broad) are egg-shaped, slightly ellipsoid to pyriform. The apical papilla is truncate, with two usually emarginate apices. The flagella are as long as, or up to one and a half times longer, than the cell. There are two anterior contractile vacuoles. The chromatophore is basin-shaped and so little of the anterior end of the cell may be free. The basal pyrenoid is large and usually rather irregularly elliptical to sub-spherical. The rounded stigma lies near the pyrenoid, about in a half part of the cell. The nucleus is central.

*Chlorolobion braunii* (Näg.) Kom. (Fig. 2,3)

The cells (17  $\mu\text{m}$  l.; 4  $\mu\text{m}$  br.) are sub-lunate, straight to slightly asymmetrical, with acute apices. Chromatophore parietal,



Fig. 1: Distribution of *Chlamydomonas carpatica* and *Chlorocobion lunulatum* in the world: (✿) Iberian Peninsula and (★) Tatra mountains (Czech-Slovakia).

band-shaped, lobate and with a single pyrenoid.

*Chlorolobion lunulatum* Hind. (Fig. 2,3)

The cells ( $14\ \mu\text{m}$  l.;  $3\ \mu\text{m}$  br.) are solitary, broad-shaped, ovoid to ellipsoid. Apices are slightly rounded and with a markedly thick polar papilla. The chromatophore is parietal, band shaped, with a single pyrenoid.

#### Habitat

The specimens on which the present account is based developed abundantly in plankton of a rain-water pool of Masarboñes, after a period of heavy rain weather. In a few days, we have observed an important growth of green algae, where *Chlorella vulgaris* was the dominant. The pH was 7.8 and the conductivity of water was  $465\ \mu\text{S}/\text{cm}$ .

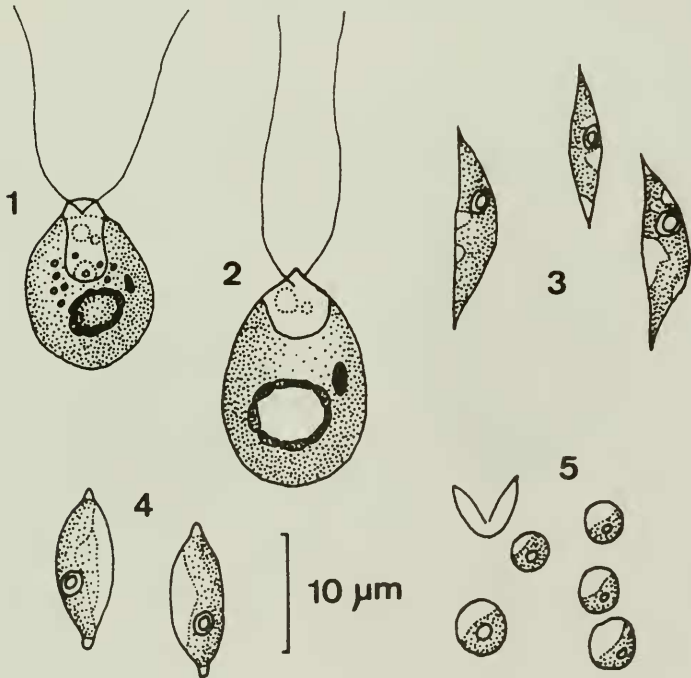


Fig. 2: (1,2) *Chlamydomonas carpatica*; (3) *Chlorolobion braunii*; (4) *Chlorolobion lunulatum*; (5) *Chlorella vulgaris*.

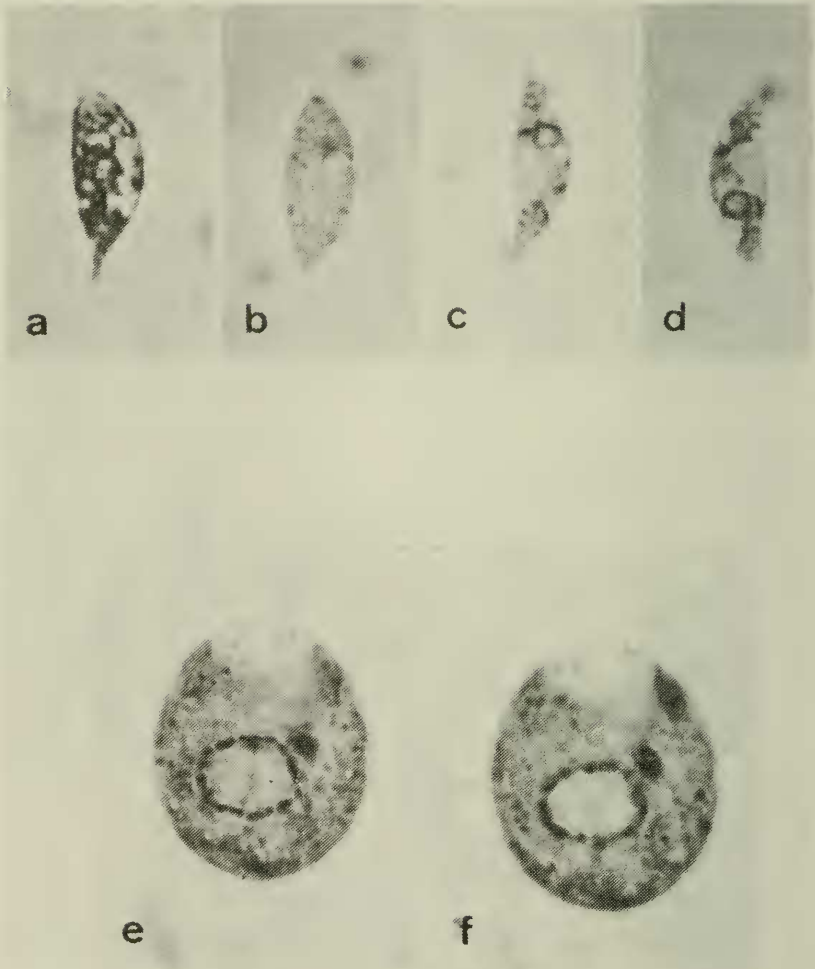


Fig. 3: (a,c,d) *Chlorolobion braunii*; (b) *Chlorolobion lunulatum*;  
(e,f) *Chlamydomonas carpatica*.

### Distribution

Our records of *Chlamydomonas carpatica* and *Chlorolobion lunulatum* are the second observation of these species in the world, after original description of EITL (1976) and HINDAK (1970), respectively. On the other hand, *Chlorella vulgaris* and *Chlorolobion braunii* are cosmopolite species (KOMAREK et al., 1983).

Untill now, *Chlamydomonas carpatica*, *Chlorolobion braunii* and *C. lunulatum* are considered to be rare in Spain. *C. carpatica* was found in a small hollow wich are intermittently filled by rain-water in Tatra Mountains (Czech-Slovakya). On the same way, *C. lunulatum* has been recorded in Tatra, after a soil culture (Fig. 1).

### References

- ALVAREZ COBELAS, M. 1986. Catálogo de las algas continentales españolas IV. *Chlorophyceae* Wille in Warming 1884. *Prasinophyceae* I. Christensen ex Silva 1980. Acta Botánica Malacitana, 11: 17-38
- CAMBRA, J. 1985. Catàleg de les cianofícies, algues d'aigua dolça i del plàncton marí dels Països Catalans. In Història Natural dels Països Catlans, vol. 4. (LLIMONA, X. et al.) Gran Enciclopèdia Catalana. Barcelona. 558 pp
- EITL, H. 1976. Die Gattung *Chlamydomonas* Ehr. Beih. Nova Hedwigia, 49. Cramer, Lehre. 1122 pp
- HINDAK, F. 1970. A contribution to the systematics of the family *Ankistrodesmaceae* (*Chlorophyceae*). Algol. Stud. Trebon, 1: 7-32
- KOMAREK, J. & B. FOTT 1983. Das Pytoplankton des Süßwassers. Die Binnengewassers. Chlorophyceae (Grünalgen). Chlorococcales, 7 (1). Stuttgart. 1044 pp
- MARGALEF, R. 1949. Materiales para una flora de las algas del NE de España 3. *Euchlorophyceae*. Collectanea Botánica, 2 (2): 233-250
- MARGALEF, R. 1950. Materiales para una flora de las algas del NE de España 3. *Euchlorophyceae*. Collectanea Botánica, 2 (3): 273-294